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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/890,564 | 08/02/2001 | Tadashi Kitamura | 009682-094 | 4591 |

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EXAMINER

SELLERS, ROBERT E

| ART UNIT | PAPER NUMBER |
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1712

DATE MAILED: 05/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 09/890,564 | | KITAMURA ET AL. | |
| | Examiner | | Art Unit | |
| | Robert Sellers | | 1712 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-67 is/are pending in the application.
- 4a) Of the above claim(s) 33,35 and 38-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-32,34,36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 22-67 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7</u> . | 6) <input type="checkbox"/> Other: _____ |

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Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 22-32 and 34-37, drawn to a sealant comprising an epoxy resin, a polyphenol curing agent and a curing accelerator.

Group II, claim 33, drawn to a sealant comprising an epoxy resin, a polyphenol curing agent, a curing accelerator and a rubber-like polymer particle.

Group III, claims 38-48, 50-54,, 56-61 and 63-67, drawn to a liquid display element employing the sealant of Group I and its process of preparation.

Group IV, claims 49, 55 and 63, drawn to a liquid display element utilizing the sealant of Group II and its process of preparation.

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The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features. The special technical feature is the sealant having a water absorption coefficient of 2 mass% or less which is disclosed in Kawamonzen et al. (col. 37, lines 33-48 and col. 41, Table 1, lines 39-41), Japanese Patent No. 5-97965 (abstract, last line of the example, water absorption of 0.38%) and Shiobara et al. (cols. 11-14, Table 1, specifically cols. 13-14, water absorption ranging from 0.40% to 0.47%). The claim language "for a liquid crystal display cell" merely denotes the ultimate intended utility of the sealant which is not an affirmative limitation.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

1) The cured compositions such as the epoxy resin, a polyphenol curing agent and curing accelerator of claim 26 wherein the type of polyphenol curing agent from claim 34 is identified.

2) The cured compositions with and without the curing accelerators of claim 26 wherein if its presence is elected, a particular species from claim 35 or 36 is identified.

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3) The cured compositions with and without the conductive bead of claim 37 wherein if its presence is chosen, a particular kind is revealed from the description on page 114, line 8 to page 115, line 9 of the specification.

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Claims 22-67 are generic.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the same reasons espoused with respect to the restriction requirement set forth hereinabove.

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During a telephone conversation with Robert G. Mukai on April 22, 2003, a provisional election was made with traverse to prosecute the invention of Group I, bisphenol A as the polyphenol curing agent, the presence of the phosphazene compound of Formula (12) depicted in claim 36 as the curing accelerator, and the presence of metal-coated organic particles as the conductive bead of claim 37, claims 22-32, 34, 36 and 37. Affirmation of this election must be made by applicant in replying to this Office action. Claims 33 and 38-67 are withdrawn from further consideration under 37 CFR 1.142(b) as being drawn to non-elected inventions. Claim 35 is withdrawn as being directed to a non-elected species of curing accelerator.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25-32, 34, 36 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "selected from" is improper Markush language and should be amended to "selected from the group consisting of."

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Kawamonzen et al.

Kawamonzen et al. (col. 37, lines 33-48 and col. 41, Table 1, lines 39-41) discloses a sealant for a liquid crystal display comprising a polyimide possessing a moisture absorption coefficients ranging from 0.33% to 0.70% which is within the confines of the claimed maximum of 2 mass%.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23 and 24 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kawamonzen et al.

Kawamonzen et al. espouses a sealant for the identical utility as for the claimed liquid crystal display with moisture absorption coefficients within the claimed maximum. The moisture permeability of claim 23 and the specific resistance value of the liquid crystal of claim 24 are inherent features of the prior art sealant based on the identical utility and moisture absorption coefficient of the reference and claims. The burden of proof shifts to applicants to determine whether or not the sealant of Kawamonzen et al. exhibits these characteristics (*In re Fitzgerald*, 205 USPQ 594, CCPA 1980).

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Claims 22, 25 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent No. 5-97965 or Shiobara et al.

Japanese '965 shows a sealant with a water absorption of 0.38% (last line of the example in the abstract) prepared from an epoxy resin and a phenol aralkyl resin.

Shiobara et al. shows an encapsulant (col. 12, lines 32-34) containing an epoxy resin and a phenolic resin exhibiting a water absorption of from 0.40% to 0.47%.

The claim language "for a liquid crystal display cell" merely denotes the ultimate intended utility of the sealant which is not an affirmative limitation.

Claims 23, 24 and 29-32 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese '965 or Shiobara et al.

Based on the equivalent uses and moisture absorption coefficients of the sealants of the references and claims, the prior art sealants inherently possess the properties required in the claims.

Claims 22-32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Nos. 55-77722, 62-295029, 5-262850, 10-273644 and 10-15005 in view of Japanese Patent No. 5-97965 and Shiobara et al.

The Japanese patents set forth sealants for liquid crystals obtained from an epoxy resin, a phenol resin and a curing accelerator wherein the feature of moisture resistance is identified.

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The claimed level of water absorption coefficient of 2 mass % or less is not recited. It would have been obvious to establish the moisture resistances of the Japanese patents to within the exemplified contents found in Japanese '965 and Shiobara et al. in order to optimize the dryness of the liquid crystal.

Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamijo et al.

Kamijo et al. (col. 3, lines 4-8) discloses a sealing film "having a low coefficient of water absorption" derived from a polyester, trifluoroethylene, polyvinyl chloride, polyvinylidene chloride or a polycarbonate. Specific values for the coefficient of water absorption are not recited.

It would have been obvious to attain a sufficiently low coefficient of water absorption within the realm of the claimed maximum of 2 mass % in order to optimize the dryness of the electrode terminal (Figure 1(a), sealing films 23 and 23' and electrode terminal 21 according to col. 2, lines 37-39).

The claim language "for a liquid crystal display cell" merely denotes the ultimate intended utility of the sealant which is not an affirmative limitation.

Claims 22-32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Nos. 2-153930, 4-85324, 4-139210, 7-94641, 8-245759 and 11-40587 in view of Japanese Patent No. 5-97965 and Shiobara et al.

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These Japanese patents are directed to sealants with low water absorption coefficients comprising an epoxy resin, a phenolic compound or resin, and a curing accelerator.

The claimed level of water absorption coefficient of 2 mass % or less is not recited. It would have been obvious to establish the moisture resistances of the Japanese patents to within the exemplified contents found in Japanese '965 and Shiobara et al. in order to optimize the dryness of the liquid crystal.

The claim language "for a liquid crystal display cell" merely denotes the ultimate intended utility of the sealant which is not an affirmative limitation.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Nos. 55-77722, 62-295029, 5-262850, 10-273644 and 10-15005 and Japanese Patent Nos. 2-153930, 4-85324, 4-139210, 7-94641, 8-245759 and 11-40587 as applied to claims 22-32 and 34 above, and further in view of Urakami et al.

The elected species of phosphazene curing accelerator is not recited. Urakami et al. teaches an epoxy resin sealant (col. 2, lines 25-26) containing an epoxy resin, a bifunctional phenol or phenol resin curing agent (col. 2, lines 56-58) and the phosphine oxide accelerator of claimed Formula (12) (col. 2, lines 38-54, general formula (1)) which prevents outside moisture absorption and epoxy homopolymerization leading to deterioration of moisture resistance and reduces the curing time (col. 1, lines 33-52 and line 63 to col. 2, line 5; and col. 6, lines 50-59).

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It would have been obvious to employ the phosphine oxide of general formula (1) of Urakami et al. as the accelerator for the Japanese patents in order to prevent outside moisture absorption and epoxy homopolymerization, and to reduce the curing time.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Nos. 55-77722, 62-295029, 5-262850, 10-273644 and 10-15005 and Japanese Patent Nos. 2-153930, 4-85324, 4-139210, 7-94641, 8-245759 and 11-40587 as applied to claims 22-32 and 34 above, and further in view of Japanese Patent No. 9-199206.


The elected species of metal-coated organic particles as the conducted beads such as the Micropearl AU series described on page 115, lines 1-4 of the specification is not recited. Japanese Patent No. 9-199206 shows Micropearl AU 7082LL conductive particles in a binder prepared from an epoxy resin and curing agent.

It would have been obvious to incorporate the Micropearl AU conductive particles of Japanese '206 as the filler for the aforementioned Japanese patents in order to impart conductivity and compression strength to the sealants.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Japanese Patent No. 60-153930 is drawn to a liquid crystal sealant comprising an epoxy resin and various phenolic resins including a polyvinylphenol.

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